Structure of heme

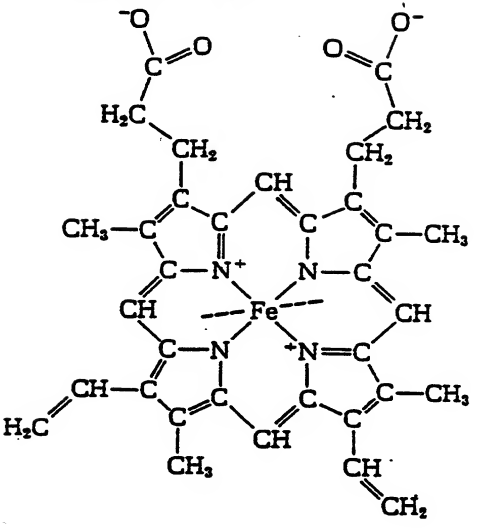

FIGURE 1

1008853.101801

TOBTOT "ESBSBOOT

Alpha globin sequence:

```
1   GTG CTG TCT CCT GCC GAC AAG ACC AAC GTC AAG GCC GCC TGG GGC  45
    Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Gly

46  AAG GTT GGC GCG CAC GCT GGC GAG TAT GGT GCG GAG GCC CTG GAG  90
    Lys Val Gly Ala His Ala Gly Glu Tyr Gly Ala Glu Ala Leu Glu

91  AGG ATG TTC CTG TCC TTC CCC ACC ACC AAG ACC TAC TTC CCG CAC 135
    Arg Met Phe Leu Ser Phe Pro Thr Thr Lys Thr Tyr Phe Pro His

136 TTC GAC CTG AGC CAC GGC TCT GCC CAG GTT AAG GGC CAC GGC AAG 180
    Phe Asp Leu Ser His Gly Ser Ala Gln Val Lys Gly His Gly Lys

181 AAG GTG GCC GAC GCG CTG ACC AAC GCC GTG GCG CAC GTG GAC GAC 225
    Lys Val Ala Asp Ala Leu Thr Asn Ala Val Ala His Val Asp Asp

226 ATG CCC AAC GCG CTG TCC GCC CTG AGC GAC CTG CAC GCG CAC AAG 270
    Met Pro Asn Ala Leu Ser Ala Leu Ser Asp Leu His Ala His Lys

271 CTT CGG GTG GAC CCG GTC AAC TTC AAG CTC CTA AGC CAC TGC CTG 315
    Leu Arg Val Asp Pro Val Asn Phe Lys Leu Leu Ser His Cys Leu

316 CTG GTG ACC CTG GCC GCC CAC CTC CCC GCC GAG TTC ACC CCT GCG 360
    Leu Val Thr Leu Ala Ala His Leu Pro Ala Glu Phe Thr Pro Ala

361 GTG CAC GCC TCC CTG GAC AAG TTC CTG GCT TCT GTG AGC ACC GTG 405
    Val His Ala Ser Leu Asp Lys Phe Leu Ala Ser Val Ser Thr Val

406 CTG ACC TCC AAA TAC CGT
    Leu Thr Ser Lys Tyr Arg
```

FIGURE 2

WO 96/01123 PCT/US95/01123

T08T0T*CS8S800T

Beta globin sequence:

```
1   GTG CAC CTG ACT CCT GAG GAG AAG TCT GCC GTT ACT GCC CTG TGG  45
    Val His Leu Thr Pro Glu Glu Lys Ser Ala Val Thr Ala Leu Trp

46  GGC AAG GTG AAC GTG GAT GAA GTT GGT GGT GAG GCC CTG GGC AGG  90
    Gly Lys Val Asn Val Asp Glu Val Gly Gly Glu Ala Leu Gly Arg

91  CTG CTG GTT GTC TAC CCT TGG ACC CAG AGG TTC TTT GAG TCC TTT 135
    Leu Leu Val Val Tyr Pro Trp Thr Gln Arg Phe Phe Glu Ser Phe

136 GGG GAT CTG TCC ACT CCT GAT GCT GTT ATG GGC AAC CCT AAG GTG 180
    Gly Asp Leu Ser Thr Pro Asp Ala Val Met Gly Asn Pro Lys Val

181 AAG GCT CAT GGC AAG AAA GTG CTC GGT GCC TTT AGT GAT GGC CTG 225
    Lys Ala His Gly Lys Lys Val Leu Gly Ala Phe Ser Asp Gly Leu

226 GCT CAC CTG GAC AAC CTC AAG GGC ACC TTT GCC ACA CTG AGT GAG 270
    Ala His Leu Asp Asn Leu Lys Gly Thr Phe Ala Thr Leu Ser Glu

271 CTG CAC TGT GAC AAG CTG CAC GTG GAT CCT GAG AAC TTC AGG CTC 315
    Leu His Cys Asp Lys Leu His Val Asp Pro Glu Asn Phe Arg Leu

316 CTG GGC AAC GTG CTG GTC TGT GTG CTG GCC CAT CAC TTT GGC AAA 360
    Leu Gly Asn Val Leu Val Cys Val Leu Ala His His Phe Gly Lys

361 GAA TTC ACC CCA CCA GTG CAG GCT GCC TAT CAG AAA GTG GTG GCT 405
    Glu Phe Thr Pro Pro Val Gln Ala Ala Tyr Gln Lys Val Val Ala

406 GGT GTG GCT AAT GCC CTA GCC CAC AAG TAT CAC
    Gly Val Ala Asn Ala Leu Ala His Lys Tyr His
```

FIGURE 3

T08T0T'ES9S80OT

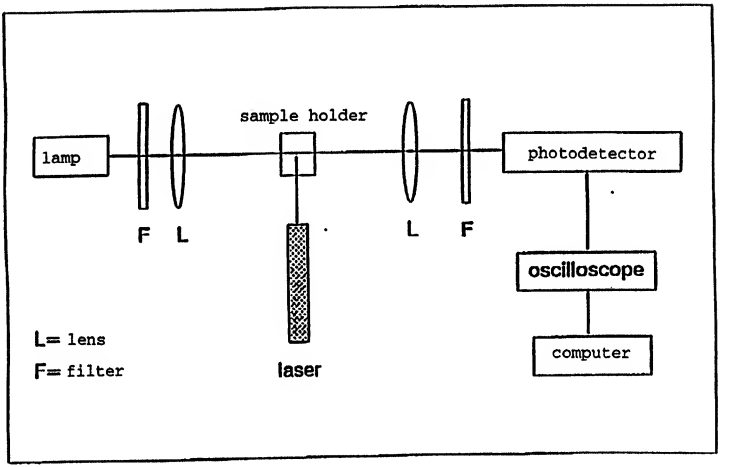

FIGURE 4

PCT/EP96/01173

T08T0T'ES8S8001

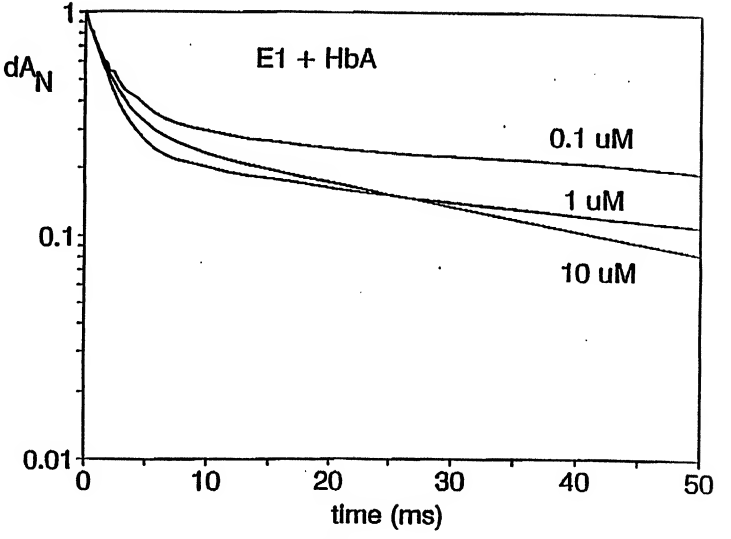

FIGURE 5

WO 97/01115
PCT/FR95/01123

T08T0T*ES8S800T

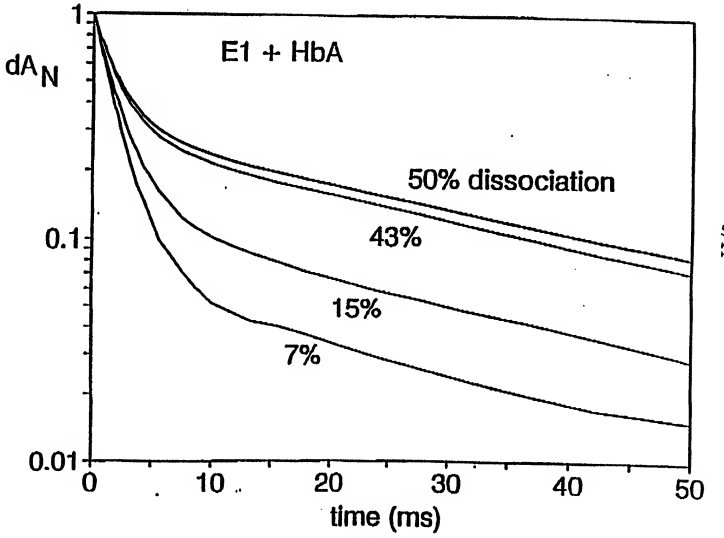

FIGURE 6

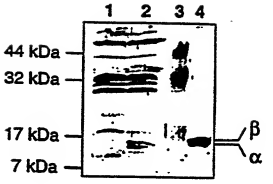

FIGURE 7

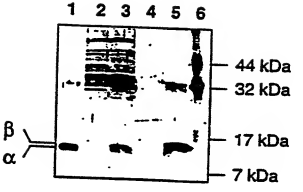

FIGURE 8

T08T0Γ'ES8S800Γ

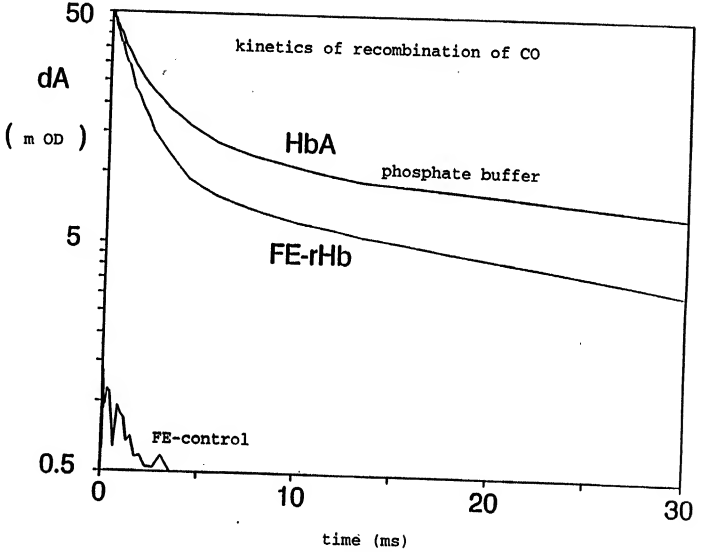

FIGURE 9

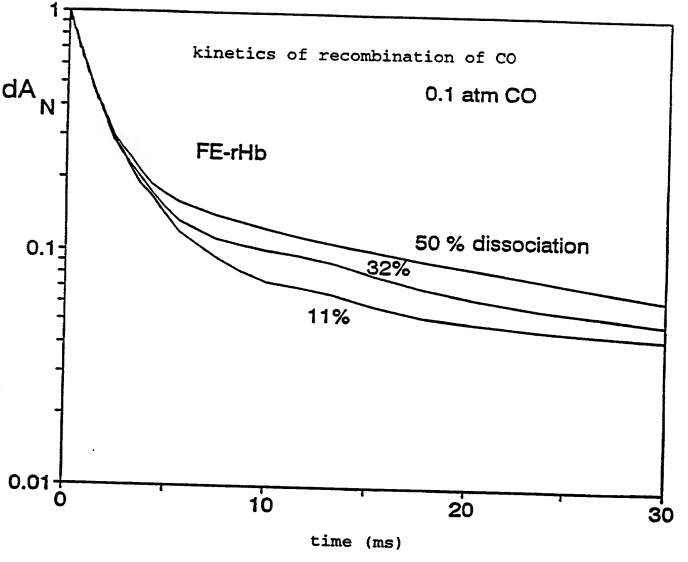
kinetics of recombination of CO
0.1 atm CO
FE-rHb
dA N
1
0.1
0.01
50 % dissociation
32%
11%
0
10
20
30
time (ms)

FIGURE 10

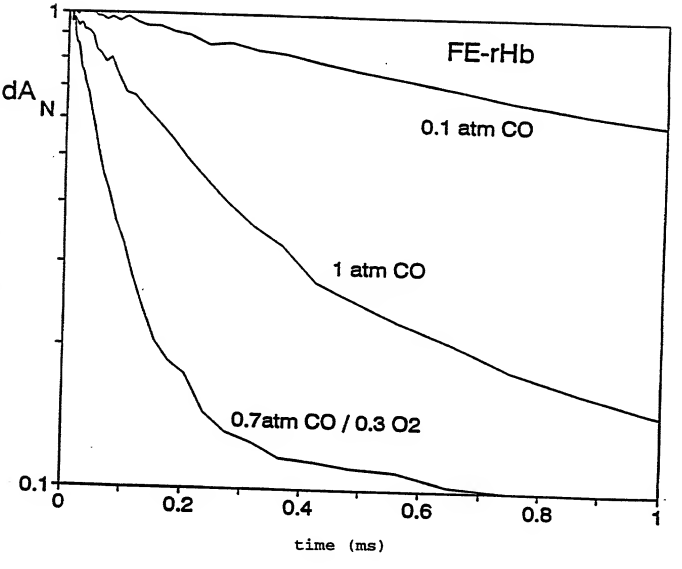

FIGURE 11

1991101355 1991101355 1991101355